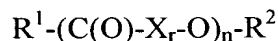




WHAT IS CLAIMED IS:

1. A coating composition, comprising:  
a latex polymer; and

5 a coalescent having the formula:



wherein:

$R^1$  is an organic group;

X is a divalent organic group;

10 r is 0 to 1;

n is 1 to 10; and

$R^2$  is hydrogen or an organic group;

with the proviso that  $R^1$  includes at least three carbon atoms  
when X is not  $-(CH_2)_s-$  wherein s is 2 to 8;

15 with the proviso that the coalescent has less than two aliphatic  
unsaturated carbon-carbon bonds when r is zero;

wherein the coalescent has a volatile organic content of less than about  
50% and is dispersible in the coating composition.

20 2. The coating composition of claim 1 wherein the coalescent does not  
phase separate from the coating composition upon standing at 49°C for four  
weeks.

25 3. The coating composition of claim 1 wherein the coalescent does not  
include aliphatic unsaturated carbon-carbon bonds when r is zero.

4. The coating composition of claim 1 wherein the coalescent does not  
include aliphatic unsaturated carbon-carbon bonds.

30 5. The coating composition of claim 1, wherein r is one.

6. The coating composition of claim 1, wherein the coalescent facilitates the formation of polymer films of the latex polymer at a temperature of less than about 25°C.

5 7. The coating composition of claim 1, wherein the coalescent facilitates the formation of polymer films of the latex polymer at a temperature of about 4°C to about 10°C.

10 8. The coating composition of claim 1, wherein the coalescent facilitates the formation of polymer films of the latex polymer at a temperature of about 4°C to about 5°C.

15 9. The coating composition of claim 1, wherein the coalescent has a volatile organic content of less than about 30%.

10. The coating composition of claim 1, wherein the coalescent has a volatile organic content of less than about 20%.

20 11. The coating composition of claim 1, wherein the coalescent has a volatile organic content of less than about 15%.

12. The coating composition of claim 1, wherein the coalescent has a number average molecular weight of no greater than about 750.

25 13. The coating composition of claim 1, wherein the coalescent has a number average molecular weight of less than about 500.

14. The coating composition of claim 1, which is in the form of a paint.

30 15. The coating composition of claim 1, wherein n is 1 to 5.

16. The coating composition of claim 1, wherein n is 1 to 3.

17. The coating composition of claim 1, wherein n is 2 to 3.

18. The coating composition of claim 1, wherein R<sup>1</sup> is an organic group having less than 100 carbon atoms.

5 19. The coating composition of claim 1, wherein R<sup>1</sup> is an organic group having substituents selected from the group of oxygen atoms, carbonyl groups, hydroxyl groups, and combinations thereof.

10 20. The coating composition of claim 1, wherein R<sup>1</sup> is an organic group having 3 to 24 carbon atoms and substituents selected from the group of oxygen atoms, carbonyl groups, hydroxyl groups, and combinations thereof; and wherein R<sup>2</sup> is hydrogen.

15 21. The coating composition of claim 1, wherein R<sup>1</sup> has the formula R<sup>3</sup>-(CH<sub>2</sub>)<sub>m</sub>-(O(CH<sub>2</sub>)<sub>p</sub>)<sub>q</sub>- wherein R<sup>3</sup> is an alkyl or aryl group, m is 0 to 24, p is 1 to 4, and q is 0 to 50.

22. The coating composition of claim 14, wherein p is 1 to 2.

20 23. The coating composition of claim 14, wherein m + pq is less than about 23.

24. The coating composition of claim 1, wherein R<sup>2</sup> is hydrogen or an organic group having less than 100 carbon atoms.

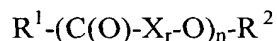
25 25. The coating composition of claim 1, wherein X is a divalent organic group having 2 to 8 carbon atoms.

30 26. The coating composition of claim 1, wherein X is a divalent organic group having 3 to 5 carbon atoms.

27. The coating composition of claim 1, wherein X is an organic group having substituents selected from the group of oxygen atoms, carbonyl groups, and combinations thereof.

28. The coating composition of claim 1, wherein X has the formula  $-(CH_2)_s-$ , wherein s is 2 to 8.

- 5 29. A coating composition, comprising:  
a latex polymer; and  
a coalescent having the formula:



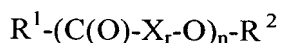
wherein:

- 10  $R^1$  is an organic group;  
X is a divalent organic group;  
r is 0 to 1;  
n is 1 to 10; and  
 $R^2$  is hydrogen or an organic group;  
15 with the proviso that  $R^1$  includes at least three carbon atoms  
when X is not  $-(CH_2)_s-$  wherein s is 2 to 8;  
with the proviso that the coalescent does not includes aliphatic  
unsaturated carbon-carbon bonds;  
with the proviso that r is one when  $R^2$  is hydrogen;  
20 wherein the coalescent has a volatile organic content of less than about  
50%, is dispersible in the coating composition, and facilitates the formation of  
polymer films of the latex polymer at a temperature of less than about 25°C.

- 25 30. The coating composition of claim 29, wherein the coalescent facilitates  
the formation of polymer films of the latex polymer at a temperature of about  
4°C to about 10°C.

- 30 31. The coating composition of claim 29, wherein the coalescent facilitates  
the formation of polymer films of the latex polymer at a temperature of about  
4°C to about 5°C.

32. A coating composition, comprising:  
a latex polymer; and  
a coalescent having the formula:



5 wherein:

$R^1$  has the formula  $R^3-(CH_2)_m-(O(CH_2)_p)_q$  wherein  $R^3$  is an alkyl  
or aryl group, m is 0 to 24, p is 1 to 4, and q is 0 to 50;

X has the formula  $-(CH_2)_s-$ , wherein s is 2 to 8;

r is 0 to 1;

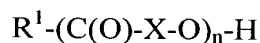
10 n is 1 to 10; and

$R^2$  is hydrogen or  $R^1$ ;

wherein the coalescent has a volatile organic content of less than about  
50%, is dispersible in the coating composition, and facilitates the formation of  
polymer films of the latex polymer at a temperature of less than about 25°C.

15

33. A coating composition, comprising:  
a latex polymer; and  
a coalescent having the formula:



20 wherein:

$R^1$  is a hydrocarbyl moiety or an organic group containing  
substituents selected from the group of nonperoxidic oxygen atoms, hydroxyl  
groups, and combinations thereof;

25 X is a divalent hydrocarbyl moiety or an organic group  
containing nonperoxidic oxygen atoms and carbonyl groups; and

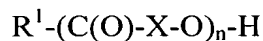
n is 1 to 10;

wherein the coalescent has a volatile organic content of less than about  
50% and is dispersible in the coating composition.

- 30 34. The coating composition of claim 33, wherein the coalescent has a  
volatile organic content of less than about 30%.



35. A coating composition, comprising:  
a latex polymer; and  
a coalescent having the formula:



5           wherein:

$R^1$  is a hydrocarbyl moiety or an organic group containing  
substituents selected from the group of nonperoxidic oxygen atoms, hydroxyl  
groups, and combinations thereof;

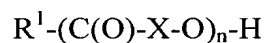
10           X has the formula  $-(CH_2)_s-$ , wherein s is 2 to 8; and  
n is 1 to 10;

wherein the coalescent has a volatile organic content of less than about  
50% and is dispersible in the coating composition.

36. The coating composition of claim 35 wherein s is 3 to 5.

37. The coating composition of claim 30, wherein the coalescent has a  
volatile organic content of less than about 30%.

38. A coating composition, comprising:  
a latex polymer; and  
a coalescent having the formula:



wherein:

25            $R^1$  is a hydrocarbyl moiety or an organic group containing  
nonperoxidic oxygens;

X is an organic group containing nonperoxidic oxygens and  
carbonyl groups; and

n is 1 to 10;

30           wherein the coalescent has a volatile organic content of less than about 50% and  
is dispersible in the coating composition.

39. The coating composition of claim 38, wherein the coalescent has a volatile organic content of less than about 30%.

5 40. The coating composition of claim 1, which has been coated onto a substrate and dried.

41. The coating composition of claim 29, which has been coated onto a substrate and dried.

10

42. The coating composition of claim 32, which has been coated onto a substrate and dried.

15

43. The coating composition of claim 33, which has been coated onto a substrate and dried.

44. The coating composition of claim 35, which has been coated onto a substrate and dried.

20

45. The coating composition of claim 38, which has been coated onto a substrate and dried.